A HYPER-LOCAL PLACE-BASED PEDAGOGY FOR EXPLORING DESIGN JUSTICE, ONTOLOGICAL DESIGN AND SYSTEMS ENTANGLEMENT

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ABSTRACT
To design transitions into fairer and healthier ways of living, we need to better understand how systems create conditions that damage the planet and make life difficult, unhealthy and unjust. So how do we support students in understanding and exploring systems? How can we help them cultivate a better understanding of their capacity to make decisions and responsibly navigate complex challenges? This case study research reports on an attempt to develop the capacity of master's students to engage with systems from an ontological design perspective. The pedagogy intended to foreground inter-relationships between people and things in systems. Data from a series of discussions that formed a central part of the learning experience are analysed to understand the learning of students in this hyper-local place-based enquiry. The research contributes to developing discourse about how we teach and introduce students to practise systemic design. It highlights how unjust and unhealthy circumstances can be found in the most familiar situations and that these can provide valuable learning spaces.

Keywords: Responsible design innovation, ontological design, pedagogy, systemic challenges

1 INTRODUCTION
Design education faces criticism for not adequately preparing students for the multifaceted challenges of their future careers. To design transitions into fairer and healthier ways of living requires a shift towards social, ecological, and ethically responsible design pedagogy. Transformative learning and place-based education are pivotal in fostering critical and creative thinking, and this study proposes the design studio as a potent experiential learning environment. By integrating critical theories, this educational approach aims to empower students to deconstruct and reshape the harmful patterns of modern life, advocating for a reflective, relational, and justice-oriented design praxis. An individual's frustration with a cluttered mug collection sparked a reflective student design project transcending its mundane origins, becoming a medium for students to explore and address underlying systems of culture, authority, and resource dynamics within their environment. The hyper-local pedagogy through its simplicity and familiarity, enabled students to engage with systemic issues. Expanding the boundaries of traditional design expectations, the project encouraged students to confront systemic clutter and inequity, fostering a deeper understanding of ontological design and their role within it. This study highlights the challenge of recognising systemic patterns within our personal spheres and questions how privilege may obscure the daily struggles of others. It underscores the value of a place-based pedagogy that leverages socio-material objects for deep systemic inquiry, demonstrating that students can discern and address complex patterns.

2 LITERATURES
It has long been argued that the current frameworks of design education do not sufficiently prepare students for the complex environments they will be working in [1; 2]. In response to this, educators call for urgent action on the development of design pedagogy to focus on the social, ecological and ethical responsibility of the designer, highlighting the importance of addressing critical and creative thinking [3; 4]. Transformative learning approaches offer students opportunities to challenge assumptions and encourage the new mindsets that researchers [5; 6] argue are essential for taking action on deep and long-lasting transitions. Place-based education [7] provides students with quality learning experiences in local settings. Educators continue to advocate for using the world as a classroom, working with real-

life problems and learning through action [8; 9]. A fundamental aspect of place-based education is that it must happen outside of the classroom and within local communities and environments. However, this study counters that position and adopts the micro-environment of the classroom itself (the design studio in this case), as the context for the student's experience and as a powerful experiential learning space. Design education must accommodate a reflective agenda to stimulate a discursive design praxis which questions assumptions and explores alternative futures [10]. This kind of education nurtures relational, ontological and pluralistic approaches, revealing diverse perspectives, contradictions and conflicts [11]. To transform complex systems, students first need help to identify harmful patterns of modern life so that they can dismantle and adjust them, with an awareness of the dynamic tensions and interplays between them [12; 13; 14]. There are several critical design theories which stimulate discussion on modern design and help to surface these conflicts. Ontological design theories challenge the dominant practices that have contributed to the crises of the modern world and help students develop an awareness that not only do *we* design the world, but the world also designs *us* and the way we live [15; 16].

Design justice and social-justice-oriented approaches are known to radically challenge designers to centre people who have been marginalised, using decolonial, collaborative, emancipatory and creative practice [17; 18]. These theories are complex and abstract and can be hard for students to apply to their everyday lives. To address this challenge educators have drawn on sociomateriality theory to facilitate pedagogical processes, enabling learners to contextualise, assimilate and apply theoretical notions within their own contexts and environments, turning on their potential as agents [19]. Using socio-material objects as a foundation for inquiry helps students understand that our entanglement with 'things' causes us to respond to their changing realities and puts patterns in place [20]. This study demonstrates one model of critical design inquiry which uses place-based sociomateriality to explore aspects of design justice, ontological design and systemic entanglement through a short student project focussing on everyday objects in their studio environment.

3 A PLACE-BASED ENQUIRY

One day in November 2023, after hours of intense work, Justine felt the need to declutter her thoughts and refocus. The solution; a cup of tea. However, she was quickly reminded of how cluttered her life was when she opened the kitchen cupboard to find the usual mountain of stacked mugs. That day, this mug-mess really bothered her. In the pursuit of calm, she emptied the cupboard and left all the personalised mugs on the kitchen table, committing to determine which mugs had no owner and which mugs should be kept. Then Nick (Nicholas) entered the kitchen and found the mug-mess on the table, he was flabbergasted.

Nick is the most senior member of the research team and has his own office. With his 'privileged' position comes the 'luxury' of having his own cupboard where *his* mug resides and therefore the mug-mess was non-existent to Nick. This event was the trigger to create a learning opportunity. Although the project may seem trivial, it was not. The project was a lot more than just a mug-mess. It was about revealing a system - the design studio - and its dynamics. It was about engaging with culture, authority, agency, power, purpose, roles, responsibilities and resources to address a specific situation - the mug-mess.

Situated in the context of a UK multidisciplinary design innovation master's programme which brings together students from different academic and professional disciplines the research focuses on a 9-day design project. The project took place 10 weeks into the programme and challenged its 8 students to bring about changes which result in fairer and healthier ways of living in a hyper-local context - their design studio. The brief [21] was inspired by a collection of 21 mugs which had gradually accumulated as students, staff and visitors had brought, used and left crockery in the small studio kitchen when they left the community. The brief asked students to consider the mugs, the systems they represent and asked them: *How did we get here? What does this situation represent? How can we deal with the situation? What can you do that can challenge or change the patterns that form this situation?* Students were invited to co-produce an exhibition of their actions, thoughts and perspectives, contributing to it daily. Students were given full creative freedom to determine the nature and forms of their project outputs and outcomes. The research and academic team did not pre-determine avenues for dealing with the mugs, nor use specific vocabulary such as *'upcycling'* that could have directed students towards a type of output. Focused on designing ways to actively transition into fairer and healthier ways of living, the project permitted the students to put things in place now for how people would live in the studio in the future.

4   METHOD

Over the 9 days of the project, at the end of each afternoon, conversations between research group members and students explored themes and outcomes from the project while considering the day's contributions to the exhibition. Each day's exhibit outputs were used as materials and insights to ground and stir theoretical discussions, which touched on how the students might see and understand systems through interacting attitudes, values, norms, choices and behaviours and how creativity might help them better understand responsible innovation. These conversations took place in the design studio and were conducted as a roundtable discussion in two rounds; firstly, each student/student team shared their work and thoughts, and then all attendees contributed in turn asking questions, sharing thoughts and provocations. On the last day students, researchers and visitors navigated the student's final exhibition before students shared the thought process behind their outputs and then the wider group discussed their insights and opinions. The conversations were recorded and transcribed using Otter.ai software and were then cleaned by the research team. The research team analysed the transcripts and photographs of exhibition outputs [22], identifying discussion themes and significant student critiques. The insights derived from this analysis are presented in the following section.

5   A LIVING SYSTEM SHOWS PART OF ITSELF

Three themes highlight how the students described their critical engagement with the systems that are the studio: cluttered lives, compassion in action, and beyond the moment (see Figure 1. and [22]).
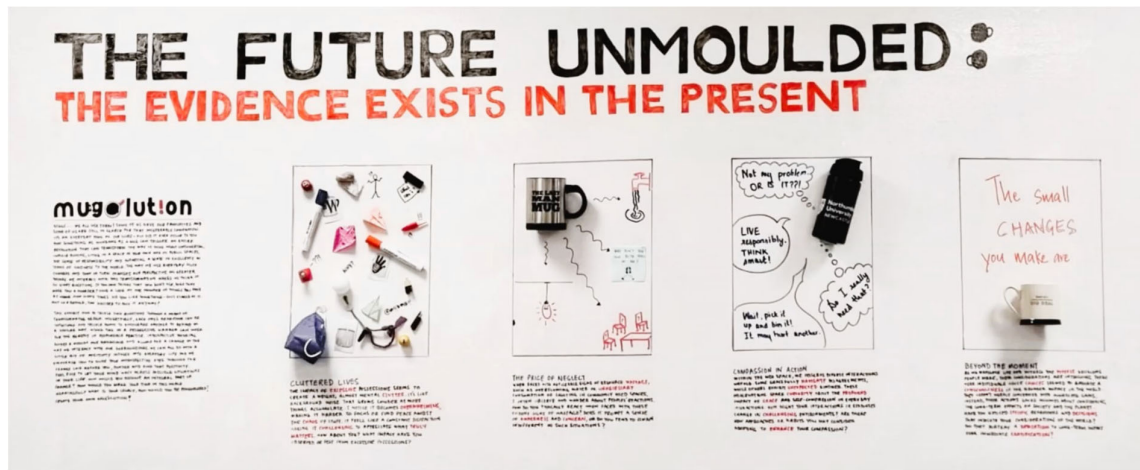

Figure 1. The Future Unmoulded, a students' contribution to this project

5.1 Cluttered lives

"The impact of excessive possessions seems to create a weight, almost mental clutter. It's like background noise that grows louder as more thinking accumulates. I notice it becomes overwhelming, making it harder to focus or find peace amidst the chaos of stuff. It feels like a constant distraction making it challenging to appreciate what truly matters" [22].

The project highlighted the studio as a system of accumulation. More specifically, the studio, a living collection of sociomaterial complex systems, was grasped by the students as a place that more effectively accumulates and retains material resources than it does transform or remove them. Students began to recognise dozens of zones and types of clutter, some identified as temporary mess (piles of pens, paper and development work) and some as lingering pollution (unused banks of computers, rolls of previous project materials, or obsolete signage). This thinking was extended to other parts of their lives with wardrobes and social media accounts being understood as other places of accumulation. These observations came with questions: who is responsible for managing different forms of clutter and excess; when it is unclear who can take ownership and what can they do; how are accumulated acts of neglect that result in different forms and volumes of accumulated clutter experienced by different people in a place?

5.2 Compassion in action

"Within the [design studio], we observe diverse interactions unfold. Some gracefully navigate disagreements, while others exhibit unexpected kindness. These observations spark curiosity about the profound impact of grace and self-compassion in everyday interactions. How might your interactions and responses change in challenging environments? Are there new approaches or habits you may consider adopting to enhance your compassion?" [22].

The students became curious about the distinctions between small but conscious acts of neglect and micro-expressions of kindness or compassion. This was developed through considering the speed it takes to change conditions and the pace of change when the immediate ways to respond are no longer acceptable or desirable. On day one of the project any one of the students could have simply put all 21 mugs into the bin. However, the students had agreed that this should not be a first response, it must be a last response. The students recognised that by having the mugs in their workspace and by being asked to creatively deal with the mugs and future mug-mess, things had changed. The interrelationship between students, staff and the mugs (and other material elements of the studio) changed and developed. Putting the mugs in a cupboard reduced exposure to 'the un-dealt with and the un-cared for'. Students became interested in other ways that sociomaterial systems hide, devalue or ignore, how conviviality and compassion might be systemically encouraged and what acts of tolerance, protest, and outrage would accompany this.

5.3 Beyond the moment

"As we navigate life and witness the diverse decisions people make, their considerations are intriguing. There were individuals whose choices seemed to radiate a consciousness of the broader impact on the world. They weren't merely concerned with the immediate gains. Instead, their actions spoke volumes about considering the long-term effects on society and the planet" [22].

'No action, no future!' stated one of the students. But the students also asked, 'which actions are for when?'. Dealing with the mugs became many things: mugs animated short films, they were given new practical purposes (as pen holders - or as tumblers to hold written notes on project feedback), they were branded, rebranded, personalised, and given personalities. They were weighed, ranked, ordered, stacked, photographed and considered in their current, broken, crushed and ground forms with the volume of material available or that of accumulation over 100 years. However, students also grasped different moments which their agency covered. Those were the immediate moment of the project, the moment of their time on the master's programme, and the future moments that certain mechanisms extended unseen into. An example of this was producing provocative gifts which they sought to embed within future induction weeks to influence future students' behaviours.

6   DISCUSSIONS
6.1 Hyper-local pedagogy

The academics' hunch was that a simple brief, located in a space that students were familiar with, using objects students could experiment with, would facilitate a deeper conversation about broader systemic difficulties. The simplicity of the brief caused nervous giggles amongst the students when first presented to them. "How is this gonna get me a job?" one queried. "How will this teach me transferable skills?". One student worried their parents wouldn't understand the value of the project if they described it to them. Aware that this would likely be the students' response, the research team underpinned the brief with key theory and explored with the group how small everyday matters can be a window into broader systemic challenges. In addition, and to emphasise the value of such work, the team invested time daily with the group to support their learning. Despite their initial concerns, all of the students took the project seriously and it resulted in valuable and legitimate learning.

6.2 Exploring expanded notions of design

Our students went into the project with a certain set of expectations: their practice is problem-solving, human-centred, and in collaboration with a set of stakeholders. This project aimed to explore expanded notions of these expectations. We witnessed the students initially treating the mugs as a problem to understand and solve, with the expectation that they would either eliminate issues or create new forms of value. However, the project asked the students to be creatives purposefully embedded in a setting of systems and patterns seeking means to foreground waste and inequity and to attempt to use their agency

to effect the studio now and in ways that hold a legacy once they leave. This, therefore, was an example of a pedagogy aimed at supporting students' experience of ontological design.

6.3 A Transformative conversation with the materials of the situation

Our students went further than having a conversation with the materials of the situation [23], human and non-human. Through the process, students gave a voice to the non-human and the left behind [22]. They evidenced transforming some of the patterns in the studio and within their own behaviours and professional practice. By *'dealing with the mugs'*, students considered the sociomaterial *'things'* they interact with, and recognised their active role in their design studio space - a system - which they design but are also designed by. Within the comprehendible, safe studio environment, students could feel the systems they engaged with and acted upon. The project encouraged students to enter into a transformative conversation with the systems of a place through forms of designing without the need for abstract mapping or discussion on systems theory.

6.4 Design-justice oriented approach

By using a design-justice-like approach, this project gave priority and meaning to something that is neglected and uncared for - discarded mugs [17] [18]. Focussing on an issue transparent to the voices of authority in the studio, it centred on the lived experience of people with marginalised perspectives, providing insights into the needs and challenges of diverse groups of people. It empowered the student community to lead and control design outcomes and recognise that everyone's experience contributes to a richer design process. It allowed people to connect with each other and the planet - seeking non-exploitative interventions [20].

6.5 Pedagogy for responsible critical design

This hyper-local place-based pedagogy for responsible and critical design challenged the design studio's status quo. By investigating this system, students questioned themselves and their community and sought to understand their individual and collective contributions towards small acts of neglect or compassion in their personal lives and in their design practices. This pedagogical approach offered a safe environment that compelled students to explore, review, challenge and critique their own assumptions, perspectives, behaviours and practices.

7   CONCLUSION & FURTHER RESEARCH

This study has made us question our ability to see systemic patterns emerging, particularly in our personal contexts. In what ways do our positions of privilege shield us from the clutter, inconvenience or harm that others experience, even in the same environment? As educators, we pose the following questions; how do we find the mug-mess in our lives? and how do we deal with it?

This research contributes a hyper-local place-based pedagogy that offers a safe environment for student exploration. Overall and by using socio-material objects as the foundation of an inquiry and engaging with the unseen, this project demonstrates that it is possible for students to engage with profound systemic thinking that goes beyond the obvious, identify harmful patterns and learn about systems in a limited space. Subsequently, we aim to use this pedagogical approach in a new responsible innovation master's programme we are currently developing. In this new programme, we aim to establish an approach to evaluate students' ability to identify and see systemic patterns by; (1) structuring a project sequence in a way that supports a gradual engagement with different complexities of pattern, and (2) assessing students through their ability to independently identify and use design to critically engage with systemic patterns. We hope this approach can be complemented with more traditional pedagogies such as mentoring students and teaching specific tools such as system mapping to support students in their responsible design journeys.

So, where are the mugs now, in the bin. The students took some for pen pots, others as souvenirs of the project, but they didn't 'deal' with the majority of the mug-mess before moving on to their next project challenge. The moral of the story has to be that regenerative ways of collective living and being are slow. Revealing systems takes time and effort, it requires someone to take agency, to 'find the mugs' and then 'deal with the mugs' and the patience and solidarity of others.

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